REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. In the claims

As shown in the foregoing amendment to the claims, the claims have been amended to more clearly point out the subject matter for which protection is sought. In particular, the independent claims 1, 6 and 13 have each been amended to include features for which support is clearly found in Figs. 4 and 5 of the pending application and at least in paragraphs [0022] and [0024] of the accompanying description in the specification.

Entry of the amendment of the claims is respectfully requested in the next Office communication.

A. Claims 1, 2 and 14

Claim 1 is amended to recite the top surfaces of the flange segments and the mounting ring lower surface contacting the flange segment top surfaces in a flush manner when the mounting ring is positioned on the support ring.

Claims 2 and 14 are left unchanged.

B. Claims 6-8 and 16

Claim 6 is amended to recite the top surfaces of the flange segments and the mounting ring lower radial surfaces contacting the flange segment top surfaces in a flush manner when the mounting ring is received on the support ring.

Claims 7, 8 and 16 are left unchanged.

C. Claims 13 and 17

Claim 13 is amended to recite the top surfaces of the flange segments and the mounting ring lower surface contacting the flange segment top surfaces in a flush manner when the mounting ring and support ring are brought together.

Claim 17 is left unchanged.

2. In the drawings

Figure 3 is presently amended in the Replacement Sheet of page 2 of the drawings. Specifically, reference numeral 76 is added to identify the top surfaces of the flange members. No new subject matter is introduced, since only identification of already illustrated features is provided by way of the amendment.

Acceptance of the Replacement Sheet is respectfully requested in the next Office communication.

3. In the specification

The specification is amended to provide written support for the changes made in the drawings in view of the amendments to claims 1, 6 and 13. No new matter is added to the application since the top surfaces of each flange member are shown in Fig. 3 as originally filed.

Entry of the amendment to the specification is respectfully requested.

4. Rejection of claims 6, 8 and 13 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent RE 30,680 (Kress et. al.)

This rejection is respectfully traversed, in view of the amendments to claims 6 and 13, on the basis that the Kress et al. patent fails to disclose each and every limitation of claims 6, 8, and 13.

The Kress et al. patent fails to disclose a mounting ring having a lower surface with a plurality of spaced protrusions extending axially from the lower surface.

The actual mounting ring in the Kress et al. patent does not have a plurality of spaced protrusions extending axially from the lower surface. The rejection has misinterpreted the Kress et al. patent and states that the Kress et al. patent shows "a mounting ring (24)" and "a support ring (39)". In actuality, the Kress et al. patent shows that the support ring is member 24 and the mounting ring is member 39. This interpretation is consistent with applicant's disclosure that the support ring is axially stationary and the mounting ring is moved into contact with the support ring in order to be coupled (see at least paragraphs [0010], [0011], [0012], [0021] and [0025] of the description in the specification).

It is clear from applicant's disclosure that the support ring is stationary while being mounted to a gear box and the mounting ring is moved axially and radially relative to the support ring in order to provide coupling (see at least paragraphs [0010], [0011], [0012], [0018], [0021] and [0025] of the description in the specification).

The Kress et al. patent does show a support ring (24) that, while rotatable, is axially fixed with the housing of the driving device, and therefore stationary (col. 4, lines 47-68; col. 5, lines 1-2). The Kress et al. patent also shows a mounting ring (39) that is moved axially with respect to the housing in order to be brought into contact with the support ring (col. 5, lines 3-13). Since it is the mounting ring (39) that is moved axially into contact with the support ring (24), the rejection has misinterpreted the elements that are defined as the support ring and the mounting ring.

The distinction between the support ring and mounting ring is important because the Kress et al. patent does not disclose protrusions extending axially from the lower surface of the mounting ring. Therefore, the Kress et al. patent does not disclose every element as recited in claims 6 and 13.

The Kress et al. patent also does not disclose the structure in claims 6 and 13 that defines an interlocking coupling, and as further defined in claim 8.

The Kress et al. patent discloses a bayonet coupling that functions as a result of a frictional fit between tabs (26) and tabs (40) (col. 4, lines 62-64; col. 5, lines 9-13; col. 5, lines 27-33). While the bayonet coupling admittedly locks (col. 5, line 13), it does not *interlock* as required by claims 6 and 13. Additionally, the underlying mechanism for the bayonet coupling is markedly different from the interlocking coupling claimed.

The frictional fit of the bayonet coupling is inherently difficult to engage and disengage. The interlocking coupling claimed does not depend on a frictional engagement, but upon the specific shapes of the surfaces of the flanges and protrusions, such that the flange segments and protrusions mutually engage and sufficiently interlock (see at least paragraph [0026] of the description in the specification). When the flange segments and protrusions interlock they form a scarf type joint. Since the scarf type joint formed does not depend on a frictional fit, the engaging and disengaging processes are easier to accomplish than with a bayonet coupling which depends on a frictional fit.

Since the Kress et al. patent does not disclose an interlocking scarf type joint, but instead a bayonet type coupling, the Kress et al. patent does not disclose every element of claims 6, 8 and 13. There is also no suggestion in the Kress et al. patent that an interlocking scarf type joint would be suitable in place of the bayonet coupling.

Since the Kress et al. patent is drawn in particular to a hand held machine tool, a coupling that is more difficult to disengage is appropriate due to safety concerns (col. 1, lines 10-68). Therefore, the easier to disengage, interlocking scarf type joint claimed, would be inappropriate as a substitute coupling for the bayonet coupling of the Kress et al. patent.

There is no suggestion in the Kress et al. patent to include the structure claimed that requires the mounting ring lower surface directly adjacent to and flush with the top surfaces of the flange segments, as required by amended claims 6 and 13.

The coupling in the Kress et al. patent is just that, a coupling. The structure recited in claims 6, 8 and 13 provides more than just a coupling, the structure recited in claims 6, 8 and 13 provides protection against the accumulation and accumulation of, typically, food particles. Since the Kress et al. patent deals with a machine tool (col. 1, lines 11-15), and would not encounter the problem of food accumulation, there would be no reason to use the claimed structure in the coupling in the Kress et al. patent.

In view of these observations, it is submitted that the Kress et al. patent does not disclose or suggest every feature required by claims 6, 8 and 13. Specifically the Kress et al. patent does not disclose or suggest a mounting ring having a lower surface with a plurality of spaced protrusions extending axially from the lower surface, the structure claimed which defines an interlocking coupling and, the mounting ring lower surface directly adjacent to and flush with the top surfaces of the flange segments.

Withdrawal of this rejection is respectfully requested.

5. Rejection of claims 6-8, 13, 16 and 17 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent 2,101,679 (Hull)

This rejection is respectfully traversed, in view of the amendments to claims 6 and 13, on the basis that the rejection fails to establish a *prima facie* case because the Hull patent fails to disclose or suggest each and every limitation of claims 6-8, 13, 16 and 17.

The Hull patent does not disclose or suggest protrusions extending axially from the lower surface of the mounting ring. The Hull patent also does not disclose or suggest the mounting ring lower surface directly adjacent to and flush with the top surfaces of the flange segments, as is required by amended claims 6 and 13.

It is relevant to these pending claims that the flanges be located on the support ring and the protrusions be located on the mounting ring and the mounting ring lower

surface directly adjacent to and flush with the top surfaces of the flange segments. This is a significant configuration that is neither taught nor suggested by the Hull patent.

The Hull patent is drawn to a spinning bucket drive for use with rayon spinning buckets. On the other hand the pending claims are concerned with a support ring system for a cutting head, typically used to process food. The problems encountered with rayon spinning buckets are greatly different from the problems encountered when dealing with a support ring system for a cutting head, typically used to process food.

The accumulation of food particulates in a cutting head can cause a multitude of concerns for the proper functioning of a cutting head. Food accumulation in the cutting head can lead to untimely wearing of the cutting head. There are also sanitary concerns when food builds up in a cutting head. The ring systems of the pending claims reduce or eliminate many of the food accumulation issues by using the specifically recited structure with the support ring having the flange segments with top surfaces and the mounting ring having a lower surface with protrusions extending axially therefrom and the mounting ring lower surface directly adjacent to and flush with the top surfaces of the flange segments. This structure, which is not disclosed or suggested by the Hull patent, is significant to the proper functioning of the support ring system of the pending claims and extends beyond simple design choice.

Design choice typically relates to cosmetic features of a device or to features that are insignificant to the specific function of the device. In the pending claims, the recited structure that the support ring having the flange segments with top surfaces and the mounting ring having a lower surface with protrusions extending axially therefrom and the mounting ring lower surface directly adjacent to and flush with the top surfaces of the flange segments is a non-obvious solution to the problem associated with food accumulation in cutting heads. It is not merely design choice to use the recited structure, as the recited structure offers significant advantages, in the

reduction of food accumulation, over traditional structures used for food processing or devices having configurations of a similar concept yet not directed to food processing.

This rejection is respectfully traversed, in view of the amendments to claims 6 and 13, on the basis that the rejection fails to establish a *prima facie* case because there is no suggestion to modify the Hull patent by placing the flanges of the Hull patent on the support ring and the protrusions of the Hull patent on the mounting ring. Since the Hull patent is not concerned with a cutting head typically used to process food, the issues that arise from processing food are insignificant to the Hull patent, and there would be no motivation for one of ordinary skill in the art to modify the Hull patent to contain the structure required by claims 6-8, 13, 16 and 17.

While uni-directional couplings are known, the Hull patent cannot be modified to use a unidirectional coupling. Disclosed in lines 26-36 of the Hull patent is the requirement that the coupling of the Hull patent be multidirectional, since the frictional coupling is overcome by the inertia of the bucket when the motor stops, resulting in movement of the adaptor relative to the bucket, "which serves to bring ears or lugs 10 into engagement with the opposite sides of the ears or lugs 8. When this occurs, the other under-cut surfaces of the ears or lugs engage with each other..."

An attempt to modify the Hull patent with a uni-directional coupling would destroy the intended function of the Hull patent because if the coupling was made to be uni-directional, when the motor stops the adaptor would disengage from the bucket. This would uncouple the bucket and adaptor and allow the bucket free axial movement during the time that the shaft spins down. The multidirectional coupling in the Hull patent is essential to the proper operation of the spinning bucket drive. Therefore, it would not have been obvious for one of ordinary skill in the art to modify the Hull patent with a uni-directional coupling.

In addition, this rejection fails to establish a *prima facie* case because there is no reasonable expectation of success for the proposed modifications to the Hull

patent. The recited structure that is lacking in the Hull patent cannot be added to the Hull patent with a reasonable expectation of success.

The recited structure of the flanges of the support ring and the protrusions of the mounting ring being configured directly adjacent to and flush with the top surfaces of the flange segments is used to prevent food accumulation in a cutting head. Since the Hull patent deals with a spinning bucket drive for rayon spinning buckets, there is no possibility of food accumulation, and nor would one skilled in the art be motivated to modify the features of the Hull patent to prevent food accumulation.

The Hull patent does not disclose or suggest every limitation recited in claims 16 and 17. Because the Hull patent discloses the protrusions integral with the support ring, the Hull patent does not disclose the protrusions having a lower radial surface that aligns generally with the lower radial surfaces of the flanges. These recited features are significant to the support ring system of the pending claims as this structure further helps to prevent the accumulation of food particles in a cutting head.

There is no suggestion or motivation to provide the Hull patent with protrusions having a lower radial surface that aligns generally with the lower radial surfaces of the flanges. Since the Hull patent is primarily concerned with a spinning drive for rayon buckets, the problems of food particle accumulation would not be encountered. Therefore, there would be no motivation to provide the structure recited that prevents food accumulation in a cutting head to the Hull patent, because the Hull patent does not deal with processing food.

There is no reasonable expectation of success to provide the Hull patent with protrusions having a lower radial surface that aligns generally with the lower radial surfaces of the flanges. Since the Hull patent is primarily concerned with a spinning drive for rayon buckets, the problems of food particle accumulation would not be encountered. Therefore, the addition of the recited structure, which prevents food

accumulation, would not function, because the Hull patent does not deal with processing food.

In view of these comments, it is submitted that the rejection over the Hull patent does not present a *prima facie* case because the Hull patent fails to disclose or suggest each and every limitation of claims 6-8, 13, 16 and 17, there is no suggestion or motivation to modify the Hull patent with the recited structure, and even if the Hull patent were modified with the recited structure, there is no reasonable expectation of success.

Withdrawal of this rejection is respectfully requested.

6. Rejection of claims 1, 2, 6-8, 13, 14, 16 and 17 under 35 U.S.C. § 103(a)

This rejection is respectfully traversed, in view of the amendments to claims 1, 6 and 13, on the basis that the rejection fails to establish a *prima facie* case because none of the cited patents discloses each and every limitation of claims 1, 2, 6-8, 13, 14, 16 and 17.

The rejection itself is unclear, as it seems that no art has been applied and the rejection's main thrust is to take Official Notice that it would have been obvious to use the structure claimed. The rejection cites as examples U.S. patent 5,694,824 (Jacko et al.), the Hull patent and the Kress et al. patent. The rejection points out the deficiencies of the art, specifically that Jacko et al. patent does not disclose the axial protrusions and flanges with matching tapered surfaces, as claimed, and that the Hull patent does not disclose the uni-directional interlocking structure claimed.

While the rejection suggests the Kress et al. patent provides the missing structure, but as discussed above in section 4, the Kress patent does not disclose or suggest the recited structure. Admittedly the Kress et al. patent discloses a unidirectional coupling. However, the Kress et al. patent does not provide the required structure of protrusions extending axially from the mounting ring lower

surface and the mounting ring lower surface directly adjacent to and flush with the top surfaces of the flange segments.

Additionally, as was discussed above in section 4, the Kress et al. patent does not disclose or suggest the lower surface of the mounting ring contacting each flange segment top surface in a flush manner, as is required by amended claims 1, 6 and 13.

Also, as was discussed above in section 5, the Hull patent does not disclose or suggest the lower surface of the mounting ring contacting each flange segment top surface in a flush manner, as is required by amended claims 1, 6 and 13.

The Jacko et al. patent does not provide the missing structure of the Hull and Kress et al. patents. While the Jacko et al. patent discloses a mounting ring with a lower surface, it does not disclose or suggest the lower surface of the mounting ring contacting each flange segment top surface in a flush manner, as is required by amended claims 1, 6 and 13.

The recited structure of the mounting ring lower surface directly adjacent to and flush with the top surfaces of the flange segments is simply not shown in any of the cited patents.

This rejection is respectfully traversed, in view of the amendments to claims 1, 6 and 13, on the basis that the rejection fails to establish a *prima facie* case because there is no suggestion or motivation to add the missing structure of the mounting ring lower surface directly adjacent to and flush with the top surfaces of the flange segments to any of the cited patents.

As was previously discussed in sections 4 and 5, the pending claims recite a support ring system for a cutting head, typically used to process food. The support ring systems of the pending claims prevent food accumulation issues by using the specifically recited structure with the support ring having the flange segments with top surfaces and the mounting ring having a lower surface with protrusions extending axially therefrom and the mounting ring lower surface directly adjacent to and flush

with the top surfaces of the flange segments. This structure, which is not disclosed or suggested by any cited patent, is significant to the proper functioning of the support rings of the pending claims and extends beyond simple design choice.

In the pending claims, the recited structure that the support ring having the flange segments with top surfaces and the mounting ring having a lower surface with protrusions extending axially therefrom and the mounting ring lower surface directly adjacent to and flush with the top surfaces of the flange segments is a non-obvious solution to the problem associated with food accumulation in cutting heads. It is not merely design choice to use the recited structure, as the recited structure offers significant advantages, in the reduction of food accumulation, over traditional structures used.

Since the Hull patent and the Kress et al. patent are primarily for uses that do not deal with processing food, there would be no reason to provide the missing structure that reduces problems associated with food accumulation.

While the Jacko et al. patent does deal with food processing, the only motivation to provide the missing structure to the Jacko et al. patent is applicant's motivation, that is, to reduce food accumulation in the cutting head by supplying a mounting ring having a lower surface with protrusions extending axially therefrom and the mounting ring lower surface directly adjacent to and flush with the top surfaces of the flange segments.

This rejection is respectfully traversed, in view of the amendments to claims 1, 6 and 13, on the basis that the rejection fails to establish a *prima facie* case because there is no reasonable expectation of success of adding the missing structure of the mounting ring lower surface directly adjacent to and flush with the top surfaces of the flange segments to the Hull or Kress et al. patents.

As was previously discussed in section 5, there is no reasonable expectation of success to provide the Hull patent with the mounting ring lower surface directly adjacent to and flush with the top surfaces of the flange segments. Since the Hull

patent is primarily concerned with a spinning drive for rayon buckets, the problems of food particle accumulation would not be encountered. Therefore, the addition of the recited structure, which prevents food accumulation, would not function, because the Hull patent does not deal with processing food.

There is also no reasonable expectation of success to provide the Kress et al. patent with the mounting ring lower surface directly adjacent to and flush with the top surfaces of the flange. Since the Hull patent is primarily concerned with a spinning drive for rayon buckets, the problems of food particle accumulation would not be encountered. Therefore, the addition of the recited structure, which prevents food accumulation, would not function, because the Hull patent does not deal with processing food.

Simply put, none of the patents cited, alone or in combination, provide the required structure of the lower surface of the mounting ring contacting each flange segment top surface in a flush manner, as is required by amended claims 6, 8 and 13.

This rejection is respectfully traversed on the basis that the rejection fails to establish a *prima facie* case because none of the cited patents discloses each and every limitation of claims 14, 16 and 17.

As was discussed above in section 5, the Hull patent does not disclose the protrusions having a lower radial surface that aligns generally with the lower radial surfaces of the flanges. These recited features are significant to the pending claims as this structure further helps to prevent the accumulation of food particles in a cutting head.

Similarly, the Kress et al. patent does not disclose the protrusions having a lower radial surface that aligns generally with the lower radial surfaces of the flanges, since the Kress et al. patent shows the surfaces of the flange portions overlapping, not aligning (Fig. 10).

Also, The Jacko et al. patent does not disclose the protrusions having a lower radial surface that aligns generally with the lower radial surfaces of the flanges.

None of the cited patents disclose or suggest the protrusions having a lower radial surface that aligns generally with the lower radial surfaces of the flanges.

There is no suggestion or motivation to provide the Hull patent with protrusions having a lower radial surface that aligns generally with the lower radial surfaces of the flanges. Since the Hull patent is primarily concerned with a spinning drive for rayon buckets, the problems of food particle accumulation would not be encountered. Therefore, there would be no motivation to provide the structure recited that prevents food accumulation in a cutting head to the Hull patent, because the Hull patent does not deal with processing food.

There is no suggestion or motivation to provide the Kress et al. patent with protrusions having a lower radial surface that aligns generally with the lower radial surfaces of the flanges. Since the Kress et al. patent is primarily concerned with hand held machine tools, the problems of food particle accumulation would not be encountered. Therefore, there would be no motivation to provide the structure recited that prevents food accumulation in a cutting head to the Kress et al. patent, because the Kress et al. patent does not deal with processing food.

There is no reasonable expectation of success to provide the Hull patent with protrusions having a lower radial surface that aligns generally with the lower radial surfaces of the flanges. Since the Hull patent is primarily concerned with a spinning drive for rayon buckets, the problems of food particle accumulation would not be encountered. Therefore, the addition of the recited structure, which prevents food accumulation, would not function, because the Hull patent does not deal with processing food.

There is no reasonable expectation of success to provide the Kress et al. patent with protrusions having a lower radial surface that aligns generally with the lower radial surfaces of the flanges. Since the Kress et al. patent is primarily concerned

with hand held machine tools, the problems of food particle accumulation would not be encountered. Therefore, the addition of the recited structure, which prevents food accumulation, would not function, because the Kress et al. patent does not deal with processing food.

In view of these comments, it is submitted that the rejection does not present a *prima facie* case because the cited patents fail to disclose or suggest each and every limitation of claims 6-8, 13, 16 and 17, there is no suggestion or motivation to modify the cited patents with the recited structure, and even if the Hull patent or the Kress et al. patent were modified with the recited structure, there is no reasonable expectation of success.

Withdrawal of this rejection is respectfully requested.

7. Conclusion

As a result of the amendment to the claims, and further in view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that every pending claim in the present application be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicants' attorney, the examiner is invited to contact the undersigned at the numbers shown below.

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